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AUTHOR Garrott, Carl L.
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ABSTRACT

This study sought to determine the extent of the serial position effect in listening to French and to specify the relationship between problem areas in listening to French and the position effect. The study addressed three hypotheses relative to the serial position effect and listening to French: (1) Was there a significant difference between the number of initial consonants and final vowels spelled correctly by L2 learners of French?; (2) Was there a significant difference between the number of initial vowels, medial consonants, and final vowels spelled correctly by L2 learners of French?; and (3) Was there a significant difference between the number of noun phrases, verbs, and objects spelled correctly by L2 learners of French? In Experiment I, the researcher used 10 students of French 101 and 10 students of French 102 randomly selected from students with midterm course grades of "C" or higher. The investigator constructed four lists (10 items each) of stimuli blends of consonants and vowels and of vowels, consonants, and vowels. Subjects were informed that any reasonable spelling of the sound would be correct. Experiment II also used randomly selected students with a midterm grade of "C" or higher. The investigator constructed four lists (two lists of 10 declarative sentences and two lists of 10 interrogative sentences). The results of both experiments provided some evidence of the serial position effect of errors toward medial positions. (Contains 27 references.) (CK)

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LISTENING TO FRENCH AND THE SERIAL POSITION EFFECT

BY

CARL L. GARROTT

Division of Modern Languages
Chowan College
Murfreesboro, NC

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LISTENING TO FRENCH AND THE SERIAL POSITION EFFECT

The relationship between using and understanding a foreign language such as French is astoundingly multidimensional. This complex behavior divided into four major activities--that is listening, speaking, reading and writing--has received considerable attention for several decades as researchers in applied linguistics attempt to substantiate theory after theory. Investigations in grammaticality, sentence processing, phonological development, semantics, testing and pedagogy have launched the language proficiency movement into the modern language classroom.

If there is one goal on which French instructors seem to agree, it is that of developing in the student some degree of listening and speaking proficiency. Communicative Language Teaching (CLT) contends that instructors focus upon communicative abilities rather than the sum total of spooned out and explicit language rules (Losiewicz, 1988). Issues of validity, proficiency-based curricula and accountability replace grammar instruction; accurate speech in a real-world context, student interaction and real listening activities accommodate modern classrooms (Heilenman and Kaplan, 1985). Given this focus, it not surprising that Krashen (1985) concludes that acquisition similar to first language development contributes to more authentic proficiency. Krashen defines learning as formal knowledge about grammatical structure; his input hypothesis emphasizes acquisition over learning.

A further issue of much concern is assessment. The Interagency Language Roundtable (IRL) and the ACTFL/ETS proficiency assessments mesh with the four modalities of language learning--listening, speaking, reading and writing (Lowe, 1985). The Oral Proficiency Interview (OPI) purports to approximate real-life communication by using interviewers with training during ACTFL workshops. Despite accusations of "false authenticity", cultural neutrality, poor inter-rater reliability and administrative problems, the OPI represents an important step in measuring listening and speaking skills (Hagiwara, 1991).

A proficiency-based syllabus of active listening skills may include the ACTFL Proficiency Guidelines, Novice through Superior Levels. These guidelines describe the novice who has a limited understanding of the spoken language to the intermediate level of comprehending short familiar conversations about limited school, social and work requirements. The superior speaker represents the level of complex conversation and narratives among educated speakers. These guidelines contend realistically that even superior speakers confront limitations in slang and dialect (James 1985).

Recent developments in listening comprehension and language learning have provided new avenues for approaching this skill. Such developments include the Natural Approach (Krashen and Terrell, 1983), Total Physical Response

(Asher, 1986) and listening processes (Anderson, 1985). Nonlinguistic variables such as anxiety (Campbell and Ortiz), 1991; Price, 1991) and motivation (Dörnyei, 1994; Gardner and Tremblay, 1994) represent research into how learners use and self-regulate languages. Repair techniques and listening strategies represent another line of research. Bacon (1992) concludes that learners employ top-down strategies (knowledge of the world) for less difficult listening passages and bottom-up techniques (grammar, syntax and word knowledge) for more difficult passages. Laviosa (1991) observes that differences in listeners relate to decoding lexical items, context and background knowledge. Rubin (1994) cites suprasegmentals, liaison and sandhi variations, syntax and morphology as listening comprehension problems for learners. Bacon (1991) catalogues megacognitive or planning for task strategies and cognitive strategies or listening for context to deduce meaning, getting the gist of a global task, relating listening activities to present knowledge and listening for detail. Bacon (1991, p. 208) states that "the principles of primacy and recency may limit them to hearing the beginning or ends of phrases, but not the middle". This statement describes the serial position effect in which the most easy items in a verbal sequence are the beginning and the end, and the most difficult items occur in the middle (DeCecco and Crawford, 1974, pp. 230-231; Woolfolk, 1993, p. 267).

Many investigators report a serial position effect in spelling words in English (Fowler, Liberman and Shankweiler, 1977; Jensen, 1962; Stage and Wagner, 1992; Treiman, 1993). Unfortunately, little research is available documenting the serial position effect and listening to French. Bacon (1991) mentions briefly the position effect; however, her discussion is brief and in terms of echoic memory and auditory stimuli. Direct evidence that the serial position effect is a limiting factor in hearing French is available only in supposition.

In this investigation we aim to determine the extent of the serial position effect in listening to French and to specify the relationship between problem areas in listening to French and the position effect. The domain of effect will be: vowels, consonants, noun phrases (NP), verb (V) and object (O). If the position effect exists in conjunction with vowels, consonants, noun phrases, verbs and objects, such information could then be used not only in making immediate classroom teaching improvements in listening skills but also in arriving at curricular decisions to get learners off to a better start in learning French.

Hypotheses

The following general hypothesis is tested in this study. There is no significant difference in student hearing of initial, medial and final phonemes and/or words in French.

The general hypothesis is reduced to the following null

hypotheses taking into account the domain of the position effect: words and phonemes.

1. There is no significant difference between the number of initial consonants and final vowels spelled correctly by L2 learners of French.
2. There is no significant difference between the number of initial vowels, medial consonants and final vowels spelled correctly by L2 learners of French.
3. There is no significant difference between the number of noun phrases, verbs and objects spelled correctly by L2 learners of French.

Definition of the Position Effect

In serial learning, the subject learns a list of stimulus items in the order in which they are presented. Under the anticipation procedure or remote associations, one item is presented and provides the stimulus for the next, which in turn becomes the stimulus for the third item. Serial learning experiments tend to yield one result, the serial position curve, which is unique to the effect. The maximum number of errors is just beyond the middle of the list to be learned (DeCecco and Crawford, 1974, pp. 230-231; Woolfolk, 1993, p. 267).

Experiment I

In this first investigation, students in French 101 and 102 (elementary college French I and II) spelled nonwords illustrating the tendency of open syllabic words in French (CV and VCV). Each hypothesis represented a reasonable explanation of this phenomenon: (1) There was no significant difference between the number of initial consonants and final vowels spelled correctly by L2 learners of French; and (2) There was no significant difference between vowels spelled correctly by L2 learners of French. It was hypothesized that the serial position effect described the fact that errors in spelling were generally more frequent in the middle of the word and least frequent in initial and final positions (DeCecco and Crawford, 1974; Stage and Wagner, 1992; Treiman, 1993; Woolfolk, 1993). Stimuli (conventions in French phonology) for this investigation were:

C = single or double consonant or pr, pl, br, bl, cr, cl, gr, gl, fr, fl, vr, tr, dr, sp, st, sf, ps, pn, str, scr; and the digraphs ch and gn.

V = single vowels (i, é, e, a, ou, u, oeu or eu), nasal vowels (an, om, in/un), semivowels (i + vowel, u + vowel, ou + vowel, il/ill final or preceded by a pronounced consonant or vowel).

Phonemics determined the correctness of all responses; conventional orthography had no precedence over any reasonable phonetic representation of a French phoneme: the emphasis of this investigation was on hearing French and spelling what

was heard. These creolized "nonwords" controlled morphological and phonological structures of the French language not permitting respondents to recall conventional words and spelling in an experimental setting.

Method

Subjects.

This investigation involved 10 learners of French 101 and 10 students of French 102 selected randomly from the pool of 28 students in French 101 and 20 learners of French 102 at a small college. Only participants with midterm course grades of C or higher were selected for this experiment.

For control purposes, subjects were briefed about the nature of this investigation and informed that data collected would be strictly confidential. Group and individual statistics would be coded and participation was voluntary. Individual scores would not be reported; normal course assignments and testing would continue.

Brief Description of French 101 and 102 (Elementary French)

- a. Classes met three times per week for a 50-minute period.
- b. Language laboratory sessions were required after each chapter.
- c. Computer-assisted instruction was available using the IBM-PC in the language laboratory and in the computer center.
- d. Conversational approaches emphasized listening, speaking, reading and writing predominated methodology. Textbooks followed ACTFL guidelines.
- e. Cultural units on France, Québec and other Francophonic regions utilized videocassette, film and slide presentations.

f. Basic French phonology was stressed throughout the course.

Procedure.

The investigator constructed four lists (10 items each) of stimuli blends of consonants and vowels (CV) and vowels, consonants and vowels (VCV). Subjects were oriented to the task and reviewed in basic spelling of French sounds or the stimuli. Subjects were informed that any reasonable spelling of the sound would be correct: this was not a study of correct French orthography. The examiner, a native-speaker, held four trials of the stimuli with subjects and tested each subject individually. The examiner used a dictation format to indicate operationally how well subjects could hear phonemes and transfer them to written form. Subjects spelling a correct phoneme scored 10; incorrect phoneme or no response scored zero. Phonemes were correct if e, ei, ai were spelled e; in as un, ain, ein; eu as oeu; il as ille; o as eau, au; an as en; e as ai.

Results.

To compare groups (French 101 and 102) and position (initial consonant and final vowels) a 2 X 2 ANOVA was conducted. The means for groups were 5.0 and 7.5, respectively; means for position (initial and final) were 8.0 and 4.5, respectively. The analysis, factorial design, indicated a significant position effect only, $F(1,36) = 5.88$, $p < .05$, $MS_{\text{error}} = 20.83$; the critical value for $\alpha = .05$ was 4.11. The researcher could conclude that subjects had fewer consonant errors than vowel errors.

To compare groups (French 101 and 102) and position (coded initial vowel, medial consonant, final vowel) a 3 X 2 ANOVA was conducted to analyze hypothesis two (There was no significant difference between the number of initial vowels, medial consonants and final vowels spelled correctly by L2 learners of French). The means for groups were 4.33 and 7.33 respectively; these means were significant at the .05 level, $F(1, 54) = 4.85$. The main effect of position was also significant, $F(2, 54) = 6.60$, $p < .01$, $MS_{\text{error}} = 5.00$; the critical value for $\alpha = .01$ was 5.012. A multiple comparison procedure, the Tukey Test, indicated a significant difference between medial consonants, and initial and final vowels. There was no difference between initial and final vowels. Means for the position effect were 5.0, 8.0 and 4.5 respectively.

Discussion.

In this experiment we addressed two questions: (1) Was there a significant difference between the number of initial consonants and final vowels spelled correctly by L2 learners of French?; and (2) Was there a significant difference between the number of initial vowels, medial consonants and final vowels spelled correctly by L2 learners of French? The analysis of variance revealed a position effect for both questions, yet a group effect for question 2 only. French learners at any elementary level appeared to perform best on consonants regardless of position.

The overall results indicated the position effect of errors in spelling medial phonemes; however, this effect did not totally explain the predominance of vowel errors. Intrinsic phonemic difficulties specific to French vowels appeared to cause genuine auditory problems for L2 learners of French. Errors in nasalization occurred in floor effects because a number of L2 learners could not distinguish one nasal vowel from another. The phonemes /y/, /oe/ and /ø/ posed a second set of problem vowels. The occurrence of such problem vowels documented in the field of phonetics (Dansereau, 1900; Dansereau, 1995) revealed the phonemic difficulties with vowels for L2 learners. French vowels, requiring great articulatory effort and exhibiting tenseness, are not pronounced exactly like American English vowels. Diphthongization is not a characteristic of standard Parisian French although Canadian French exhibits a number of diphthongs (Ossipov, 1994, p. 949).

Experiment I suggested that the position effect did exist: items at the beginning or end of word were heard, but not middle phonemes (Bacon, 1991). Primacy and recency effects were confirmed in this investigation. The results of this experiment confirmed that vowels and consonants did not appear to be spelled correctly at the same rate. Both groups (French 101 and 102) tended to perform better on consonants. Furthermore, final and initial vowels were not statistically different in error

rates. The investigator hypothesizes that the intrinsic difficulty of the French vowel contributes significantly to the error rate and that the typical medial position of vowels in syllables enhances the position effect.

Experiment II

Experiment II involved randomly selected students in French 101 ($N = 10$) and French (N = 10). The primary interest of this investigation was: Was there a significant difference between the number of noun phrases, verbs and objects spelled correctly by L2 learners of French? Again it was hypothesized that the serial position effect such that noun phrases and objects were more easily spelled than verbs because of primacy and recency effects. Subjects in elementary French I and II spelled words using the conventions established in Experiment I.

Method

Subjects.

Twenty subjects participated in this investigation: 10 students per group. These subjects were randomly selected from the pool of 25 students in French 101, and 22 students in French 102 at a small college. Again only midterm course grades of C or higher were selected for participation. Subjects were briefed about the structure of the investigation (sampling, data collection, method and data reporting). All subjects were volunteers.

Procedure.

The investigator constructed four lists (two lists of 10 declarative sentences and two lists of 10 interrogative sentences). The examiner, a native-speaker, held four trials to familiarize subjects with the stimuli. In the testing phase subjects heard and wrote the sentences. Subjects spelling a correct and recognizable noun phrase, verb or object scored 10 points; incorrect or no response designated zero.

Results.

Experiment II permitted a 3 X 2 ANOVA design in which the main effects were group (French 101 and French 102) and position (noun phrase, verb and object). Position was coded as initial, medial and final. Means for group effect were 4.0 and 8.66, respectively. The analysis of variance indicated a significant group effect, $F(1,54) = 21.52$, $p < .001$, $MS_{\text{Error}} = 15.18$, and a significant position effect, $F(1,45) = 8.01$, $p < .01$, $MS_{\text{Error}} = 15.18$. Means for position were 8.0, 3.5 and 7.5, respectively. The Tukey Test of the position effect revealed a significant difference between noun phrases (initial) and verbs (medial), and between objects (final) and verbs (medial); correct performance on noun phrases and objects did not differ statistically.

In order to clarify group and position effects the investigator transposed the position of the noun phrase and the verb. The design of the 3 X 2 ANOVA remained group versus position effects, but position was coded verb (initial), noun

phrase (medial) and object (final). Means for the group effect were 4.33 and 8.66, respectively; $F(1,54) = 17.09$, $p < .001$, $MS_{\text{Error}} = 16.48$. The main effect of group was significant. Means for position effect were 4.0, 8.0 and 7.5, respectively; $F(1,54) = 5.76$, $p < .01$, $MS_{\text{Error}} = 16.48$, therefore the main effect of position was significant. The multiple comparison procedure (Tukey) revealed that correct scores on noun phrases and objects exceeded that of verbs. There was no significant difference between correct scores on noun phrases and objects.

Discussion.

Experiment II addressed the question of group and position effects using the sentence as the domain. The question was: Was there a significant difference between the number of noun phrases, verbs and objects spelled corrected by L2 learners of French. The analysis of variance revealed a group effect (French 102 learners outscored French 101 students) and a position effect (error rates for verbs exceeded that of both noun phrases or objects).

Again the position effect of errors toward the medial position was noted; however the serial position effect resulted from declarative sentences only. When the investigator transposed the noun phrase and the verb in imitation of interrogative sentences, error rates for verbs remained higher than for noun phrases or objects. If the serial position effect were valid, the relative difficulty of all words would not vary with position changes.

Turning to the French verb and its intrinsic difficulties, the learner is faced with an astounding system of tenses, moods and forms. Elementary French learners wade through a system of bound and free morphemes (endings and roots), regular and irregular verbs, conjugations, voices and tenses. For example, vous parlerez (you will speak) requires the L2 learner to hear two free and two bound morphemes. The pronoun and root of the verb comprise two minimum units of meaning whereas /r/ marks the future tense; the ez signals the second person plural. The addition of prefixes and infixes to some French verbs further complicate aural input. Consequently, the L2 learner must evaluate verbs in seconds and move on to the object phrase. L2 learners may face loss of comprehension, stop listening and fail to recover immediately (O'Malley et al, 1987). Since every sentence explicitly or implicitly has a verb, the verb occupies a central place in the sentence and a source of learner anxiety.

Conclusions

In this study we addressed three hypotheses relative to the serial position effect and listening to French: (1) Was there a significant difference between the number of initial consonants and final vowels spelled correctly by L2 learners of French?; (2) Was there a significant difference between the number of initial vowels, medial consonants and final vowels spelled correctly by L2 learners of French?; and (3) Was there a significant difference between the number of

noun phrases, verbs and objects spelled correctly by L2 learners of French? Bacon (1991, p. 208) stated that "the principles of primacy and recency may limit them to hearing the beginning or ends of phrases, but not the middle. . . .listeners may believe they have understood something only to immediately forget it". Many investigators have reported this position effect in English words (Fowler, Liberman and Shankweiler, 1977; Jensen, 1962; Stage and Wagner, 1992; Treiman, 1993); however, little research was available documenting the serial position effect in listening to French by L2 learners.

The results of both experiments provided some evidence of the serial position effect of errors toward medial positions; however, this effect did not explain the predominance of vowel and verb errors among subjects. These results suggested intrinsic difficulties in which certain vowel phonemes and the French verb were more difficult to hear, and operationally, to spell. Also, if the serial position effect were universally valid, the relative difficulty of all phonemes and/or words would not vary relative to position.

Recommendations for Further Investigation

1. The replication of the experimental design using Portuguese, a Romance language with comparable complexities in vowel phonemes and verbs.
2. Experimental research involving "chunking", length of sequences and memory span.
3. Metacognitive strategies (self-directed task planning) in L2 learners.

4. How L2 learners listen for the gist by excluding extraneous information from aural input.

5. How L2 learners manage aural input involving nouns with cases.

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